AD-A072 863 ARMY COMMUNICATIONS-ELECTRONCS ENGINEERING INSTALLATI--ETC F/G 17/2
FORT GORDON AN/FTC-31 SWITCH ENHANCEMENT. PARAMETER INADEQUACIE--ETC(U)
AUG 79

UNCLASSIFIED CCC-TED-79-TP-055 NL

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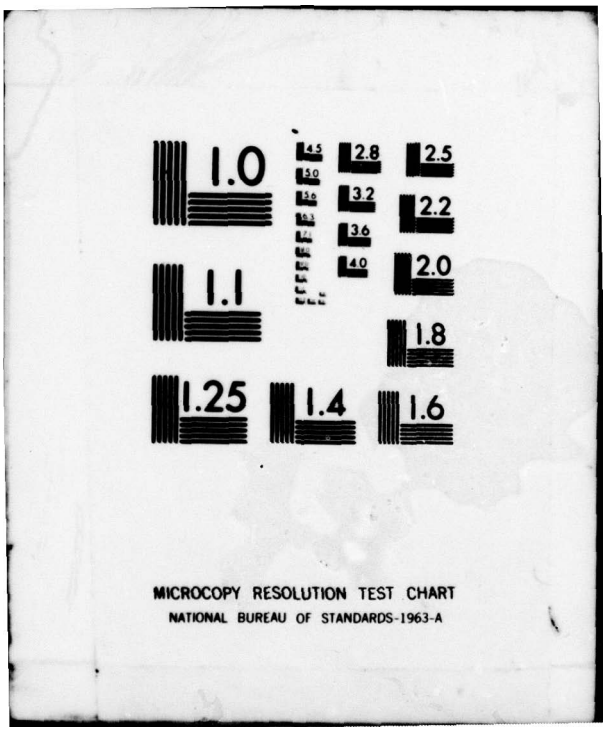
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MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

DEPARTMENT OF THE ARMY
U.S. ARMY COMMUNICATIONS-ELECTRONICS
ENGINEERING INSTALLATION AGENCY
FORT HUACHUCA, ARIZONA 85613

WPE-3476ND

LEVEL II

AUG 3 1979

CCC-TED-TSAS

SUBJECT: Fort Gordon AN/FTC-31 Switch Enhancement, Parameter Inadequacies Test Plan, ~~Publication No. CCC-TED-79-TP-055~~

(14) CCC-TED-79-TP-055

Commander
US Army Communications Systems Agency
ATTN: CCM-SW-C
Fort Monmouth, NJ 07703

(12) 13 P' (11) 3 Aug 79

1. REFERENCES:

a. USACSA, Statement of Work for AN/FTC-31 (V) Enhancement, CCM-SW-C-0003, 18 Oct 77, with changes 2 Dec 77.

b. AN/FTC-31 Enhancement Design Plan, WDL-TR7615A, 14 Nov 77.

c. AN/FTC-31 Category II Test Procedure, 9 Feb 79, as redlined.

d. AN/FTC-31 Switch Enhancement, 72-Hour Government Operated, Equipment/Systems Test, CCC-TED-78-TP-022, 1 Mar 79.

e. Interim Report, Test and Acceptance of Enhanced AN/FTC-31 Switch, Fort Gordon, GA, CCC-TED-79-TR-049, 6 Jun 79.

2. STATEMENT OF TASK: To test the corrections of specific inadequacies found during Category II and the 72-hour test as noted in reference 1e.

3. BACKGROUND: The Fort Gordon AN/FTC-31 Enhancement Switch was tested during the period 19-24 May 79 and the results indicated a failure of the switch to meet requirements as specified in reference. As a result of the failure, the Fort Gordon AN/FTC-31 Enhancement Switch will be retested utilizing reference 1c and this test plan.

4. RESPONSIBILITIES: As defined in reference 1d.

5. TEST REQUIREMENTS:

a. Test required of this test plan will complement testing required of the contractor during his portion of the formal acceptance test.

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b. Test required by this test plan will be keyed to the specific inadequacies as noted in references 1e, paragraph 6.

6. TEST PERSONNEL: Personnel required during the performance of test are:

a. US Army Signal School, two Government witnesses, and assistance as required.

b. USACEEIA, one test director.

c. Contractor, one test conductor, and assistance as required.

7. TEST EQUIPMENT:

a. Sufficient KY-3's to simulate a minimum of 12 connected calls will be furnished and installed by the Signal School prior to the start of test.

b. Additional test equipment is not required beyond that provided by contract which is available at Fort Gordon.

8. TESTING: The test of Inclosure 1 shall be conducted and test results recorded on test data sheets.

9. TEST REPORT REQUIREMENT: Upon completion of all testing, Category II and Parameter Inadequacies Test, USACEEIA, CCC-TED-TSAS, shall provide USACSA, CCM-SW-C, a final test report.

FOR THE COMMANDER:

Calvin F. Phillips

1 Incl
as

CALVIN F. PHILLIPS
Colonel, Signal Corps
Director, Test & Evaluation Directorate

CF:
COMMANDERS
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SUBJECT: Fort Gordon AN/FTC-31 Switch Enhancement, Parameter Inadequacies Test Plan, Publication No. CCC-TED-79-TP-055

CF (continued)
DIRECTORS
Defense Communications Agency, Technical Library Center, Code 205, Washington, DC 20305
Defense Document Center for Scientific and Technical Information, ATTN: Documentation Service Center, Alexandria, VA 22314

FORT GORDON AN/FTC-31 TEST

1. Initialization

a. Initialize the system using the operational program diskette.

____

b. After the system is initialized, check each trunk to ensure there is no 2600 Hz being transmitted.

____

c. Put all subscriber lines and trunks in service. ____

d. Check each trunk to ensure that 2600 Hz is being transmitted.

____

NOTE: During performance of test, observe for error 213 (invalid preempt signal) from SEVAC; error 215 (connect/disconnect orders not issued within 10 seconds); and MF 2/6 faults. If any occur, note at end of test.

2. Error Code 207 (Ring Timeout)

a. Have sub A (4032) call sub B (4033) at a 5-level precedence.

____

b. Do not answer ring on sub B. ____

c. After 45 seconds, verify that sub A received preempt tone and DASHER printout "line 033 ERROR 207". ____

3. 2600 Hz on Trunks

a. On the SEVAC, go off-hook on the first trunk and do not dial any digits.

____

b. At the patch panel, monitor the transmit side of the trunk. After 19 seconds, note that 480/620 busy tone is being transmitted.

____

c. After an additional 45 seconds, note that the busy tone is no longer present.

____

d. Return trunk to on-hook and monitor for the 2600 Hz.

____

Incl 1

e. At the DASHER, type in "MOUT Ø". Note the 2600 Hz is no longer being transmitted.

f. Return the trunk to in-service.

4. Simultaneous On-Hook

a. Have two subscribers call SEVAC and put on hold.

b. Have SEVAC call two subscribers and put on hold.

c. Have all subscribers go on-hook simultaneously and note that all connections were released from the SEVAC and that each subscriber can go off-hook and receive dial tone.

5. Mode I Trunks

a. From subscriber A initiate a call to 2311 at a 5-level precedence.

b. While sub A is receiving ringback tone, have sub B call 2311 at a 3-level precedence.

c. Note that subscribers A receive preempt tone, the trunk received a preempt for reuse, the digits were outpulsed, and subscriber B is receiving ringback tone and the distant subscriber's phone is ringing.

d. Have subscriber A call subscriber B at a 2-level precedence.

e. Note that subscriber B received preempt tone and the trunk received a preempt for non-reuse and goes to idle (on-hook).

f. Have subscriber B go on-hook and note that his phone rings and after answering it, is connected to subscriber A.

g. Have both subscribers go on-hook.

h. From subscriber #2311, have the Pentagon initiate a call to subscriber #4032 at a 5-level precedence.

i. From another Pentagon subscriber, call subscriber #4033 at a 4-level precedence.

j. Note that subscriber #4032 receives preempt tone, the trunk receives a preempt for reuse, the incoming digits were received, and 4033 rings.

k. While subscriber #4033 is ringing, have subscriber #2311 call (2111) at a 3-level precedence.

l. Note that subscriber #4033 receives preempt tone, the trunk receives preempt for non-reuse, and goes to idle (on-hook).

m. Have subscriber A call subscriber #2311 at a 5-level precedence.

n. While subscriber A is receiving ringback tone and subscriber #2311 is receiving ring tone, inject a pseudo 50 kbs signal into the "Receive/Switch IN" jack.

o. Note the call stays connected until subscriber A goes on-hook.

6. SWAP Messages and Lost Calls

NOTE: As each of the following calls are connected, perform a status command on the calling party.

a. Initiate calls between the following subscribers:

FROM SUBSCRIBER	TO SUBSCRIBER	PRECEDENCE
A (4032)	D (4035)	1
B (4033)	C (4034)	2
E (4036)	T (4055)	5
I (4048)	L (4051)	3
M (4052)	F (4037)	4
U (0)	J (4049)	1
K (4022)	V (0)	5

b. At the DASHER, type in the SWAP command. ____

c. Note that immediately after the swith-over from Processor A to Processor B, the status message "System Warm Started. B active, A Standby". ____

d. Perform a status on the calling party of subscribers in 6a. Note any calls that are no longer connected. ____

e. At the DASHER of the active processor, type in the SWAP command. ____

f. Note that status message "System Warm Started. A active, B standby" is printed immediately after the switch-over takes place. ____

g. Perform a status on the calling party of subscribers in 6a. Note any calls that are no longer connected. ____

7. Link Mapping/All Links Busy/Link Preemption

a. Busy out (MXOUT command) seven links within one group. ____

b. Begin connecting subscribers at 5-level precedences until all available links within the group are used. ____

c. Note that busy tone is received and the processor does not go into a loop when a link is not available to connect a call. ____

d. Repeat this procedure for each group. ____

e. Attempt to preempt a link by placing a call at a 4-level precedence to a subscriber within a group that indicates all links are busy. Do not, at this time, attempt to call a subscriber that is known to be connected. ____

f. Note that the subscribers associated with the link being preempted receive preempt tone. ____

g. Upon receipt of preempt tone, place the phones on-hook and note the progress of the 4-level call. ____

h. Repeat steps e, f, and g for each group at precedence levels 3, 2, and 1.

i. Repeat steps e, f, and g for each group at all precedence levels calling to a busy subscriber.

j. After completion of test, put links back in-service.

8. TEST ALL Command

a. At the DASHER, type in "TEST ALL" and end with a carriage return (CR).

b. Note that is requires only one space between TEST and ALL for the test to run.

NOTE: It is not necessary to let the test run. Type in "STOP" and depress the CR.

9. Matrix Link #10

a. Initiate a call from subscriber A to subscriber B at a 5-level precedence.

b. Perform a status on subscriber A and note what link is being utilized.

c. Repeat steps a and b until link #10 has been used three times, note that no calls were lost.

d. At the DASHER, type in "TEST LINK 10" and end with a cr.

e. Repeat step d six times. Note that all test results are the same (no test failures indicated).

10. Printer Overprint

a. At the DASHER, type in "SDTIME" and one space.

b. Pull a regen card from the card file.

c. Observe that the following fault message is printed one line below the "SDTIME" entry, "FAULT REGEN LINE XXX." (XXX = the RLA of the regen that was pulled.)

_____

11. Standby Processor

a. Depress the Manual/Auto button to put the system in manual mode.

_____

b. Depress the disable button for processor B. _____

c. Pull the MF 2/6 card from the card file causing a solid MAJOR alarm to exist.

_____

d. While the alarm condition exists, put processor B in standby and put the system in AUTO mode.

_____

NOTE: The system shall be in Auto mode with A active and B standby at the conclusion of step d.

_____

e. Return the MF 2/6 card to the card file. _____

12. MINF/MOUF Commands

a. Initiate a call between sub A and sub B. _____

b. Perform a status on RLA 32. _____

c. While the call is in progress, type in "MOUF 32". _____

d. Perform a status on both RLA's (32 and 33). _____

e. Note that RLA 32 is MOOS and cannot draw dial tone. _____

f. Verify that the link tested in step b is available. _____

g. Type in "MINF 32". _____

h. Note that sub A can draw dial tone. _____

NOTE: This test should be performed a minimum of 4 times using different subs. Observe the system for "INVALID MATRIX PATH AND/OR THIRD INTRUSION" errors.

_____

13. Error Code 203

a. Initiate a call between sub A and sub B. ____

b. While sub A is receiving ringback tone and sub B is ringing, perform a status on sub A to identify the link that us being used to connect the subs. ____

c. Pull the matrix board associated with the link identified in step b and have sub A go off-hook. ____

d. Verify that within five seconds after sub B goes off-hook, the proper error 203 message is printed and a preempt sequence is issued to both RLA's. Disregard any other printouts. ____

e. Replace the matrix board and perform a SSD "Test Subs 32" and "Test Subs 33" to clear the link relays. ____

f. Repeat steps a through e between subs K and the Mode 1 trunk. ____

14. Error Code 217

a. Initiate a call from sub A to sub B. ____

b. While the call is in progress, disable the KY-3 cipher output. ____

c. After 20 seconds, note that a preempt sequence is issued to both RLA's and the proper error message is recorded. ____

d. Initiate a call from sub A to Mode 1 trunk. ____

e. At the patch panel, inject a cipher signal into the receive switch IN jack to simulate a connected call. ____

f. Remove the cipher signal. ____

g. Note that after 20 seconds, a preempt sequence is issued to both RLA's (non-reuse for the trunk circuit) and the proper error message is received.

15. Error Code 201

NOTE: Do not think this can be done at Gordon.

16. Disk Write Command

a. Reinitialize the system using the operational program diskette.

b. Put subs A through K and the SEVAC lines in service.

c. Remove the diskette from the disk drive unit.

d. Type in the "WRITE" command for data base "DDWCT".

e. Note that the command is invalid.

f. Replace the diskette and repeat step d.

g. Note that the command is valid and perform a status on subs A-K and SEVAC lines.

h. Proceed to the next test.

17. Data Base Selection

Perform the necessary steps to return to the original data base. -- Procedures to be developed at a later date.

18. Power Fault Toggling

a. At power control panel, switch off the +5 volts for processor B.

b. Note that the message "POWER SUBSYSTEM FAULT" is printed only once.

c. Switch the +5 volts back on.

d. Note that the message "POWER SUBSYSTEM NORMAL" is printed only once. ____

19. SSD-Link Test

a. At the DASHER, type in "test links ALL". ____

b. Note at the end of the test no links are marked POH. ____

c. Repeat steps a and b two times. ____

20. Date/Month MMI Entry

a. At the DASHER, set the date timer to 08/24/79 235950. ____

b. After 10 seconds, type in "DTIME". ____

c. Verify that the message "08/25/79 0001XX" is printed (XX = seconds). ____

d. Continue to enter dates through the 31st and verify that all dates entered were valid. ____

21. AOOS-Error Messages 203, 204, 211, 212, and 214

NOTE: Error 203 tested in paragraph 13 above. Error 212 tested and verified during the Cat II retest.

a. At the regen card file inject a 25 kHz signal into the test jack of subscriber "A". ____

b. Note that the proper error 214 message is printed and subscriber "A" is marked AOOS. ____

c. Put subscriber "A" back in service. ____

d. Perform steps a, b, and c on the MODE I trunk and verify results. ____

e. Put the MODE I trunk back in service. ____

f. At the patch panel inject a 2600 Hz signal into the receive switch "in" jack of the MODE I trunk.

_____

g. At subscriber "A" dial 2311 at a 5 level precedence. _____

h. Note that the proper error 211 message is printed, subscriber "A" receives preempt tone, and the MODE I trunk is issued a preempt for non-reuse sequence.

_____

i. At subscriber "A" dial 2311 at a 5 level precedence. _____

j. At the patch panel, monitor the transmit side of the MODE I trunk and after the digits have been transmitted, inject a 2600 Hz signal into the receive switch "in" jack.

_____

k. Note that after approximately 60 seconds the proper error 204 message is printed, subscriber "A" receives busy tone, and the trunk returns to idle.

_____